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NOTES ON CHALCOLEPIDIUS AND THE ZOPHERINI.

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The species and subspecies of *Chalcolepidius* having the side margins of the upper surface densely clothed with white or whitish scales, are very numerous in Arizona and northern Mexico, constituting one of the characteristic northern types of the genus. The recent appearance of a paper by Dr. Otto Schwarz (Deutsche Ent. Zeit., 1906, p. 97), describing two of these forms, has suggested the general revision here attempted, although, after careful study of these descriptions, I am forced to the conclusion that *substriatus* is nothing more than a slight modification of the typical *Webbi*, Lec., in which the lateral white vittæ of the pronotum are sometimes transversely coalescent at the middle of the length, and that *parallelus* is identical with *tartarus* Fall. Most of the new forms here described were taken by Prof. F. H. Snow, in the course of his many fruitful expeditions to Arizona.

Because of the want of data which might in any way enable me to determine or even infer their true relationships with the material at hand, I have tentatively assumed all the forms described to have the weight of species, not attempting to indicate those that may prove ultimately to be more properly subspecies. A few new Mexican species are also included in the following table :

1. Scutellum triangular, flat, deflexed and evidently notched anteriorly..2

Scutellum triangular, deflexed but not evidently notched anteriorly; antennæ pectinate in the male, serrate in the female, the third joint but little longer than the second, the fourth longer than the two preceding together; body uniformly and more or less densely clothed with brilliant bluish, greenish or coppery squamules, except, as usual, along a denuded median line on the under surface; form narrow, elongate, parallel, only moderately convex, black, shining, the basal angles of the prothorax not or only very feebly everted; descriptions drawn from the female 18

Scutellum transverse, suboval, biimpressed, not emarginate anteriorly; body uniformly clothed with minute close-set olivaceous squamules; antennæ serrate in both sexes; tibiæ not ciliate in the male 20

2. Antennæ serrate in both sexes 3
Antennæ pectinate in the male, serrate in the female, the third joint about half as long as the fourth; body narrow, elongate, rather convex, the elytra moderately narrowed from base to apex; integuments black, shining, uniformly but not very densely clothed with minute olivaceous squamules; elytral striæ deeply impressed, strongly punctured, the intervals uniform and convex; scutellar notch feeble. Atlantic nearctic fauna 17
3. Epipleura in colour and vestiture similar to the marginal parts of the upper surface 4
Epipleura in colour and vestiture similar to the under surface 16
4. Pronotum, and usually the elytra, margined at the sides with dense, closely-decumbent scales, which are larger, flatter and more strigose than those clothing the remainder of the surface, which are very small, pointed, convex, feebly or not strigose and metallic in coloration, forming a more or less pronounced bloom; integuments black throughout; anterior and middle tibiæ generally ciliate beneath in the male 5
Pronotum not vittate at the sides; body black, the elytra and epipleura red; anterior tibiæ ciliate beneath in the male 15
5. Elytral intervals flat or nearly so, sometimes feebly concave, the striæ unimpressed or very feebly impressed and finely punctate 6
Elytral intervals evidently though moderately convex; equal in width, the deeply impressed striæ strongly punctured 13
Elytral intervals very uneven in width, strongly elevated, the striæ sulciform, with the punctures concealed by the dense vestiture of the sulci. Mexico 14
6. Pale pronotal vittæ pure white, unusually broad, dilated inwardly at the middle, where each is much wider than the intervening dark space, the white margin at the sides and base of the elytra unusually wide, the white scales having a tendency to invade also the intervals within the border, from the humeral regions posteriorly; surface rather convex, the minute squamules olivaceous-green, rather dense and more persistent than usual; basal angles of the prothorax slightly everted, the sides becoming strongly convergent and rounded in apical third; third antennal joint more than twice as long as the second, about two-thirds as long as the fourth. Length 25.0–29.0 mm.; width 7.5–8.8 mm. Arizona (Yuma). [= *substriatus*, O. Sch.] *Webbi*, Lec.

Pale pronotal vittæ narrower, more or less nearly half as wide as the intervening dark space, distinctly dilated internally just behind the middle ; third antennal joint as in *Webbi* 7

Pale vittæ relatively very narrow, much less than half as wide as the intervening dark space, and never dilated internally near the middle; third antennal joint more elongate, about three times as long as the second and but slightly shorter than the fourth, except in *simulans*; species larger in size, the elytral intervals alternating but slightly in width in the females, from which sex all the descriptions are taken ; minute squamules moderately close-set, forming a thin blue to olivaceous bloom, very readily denuded 10

7. Body stouter and strongly convex, the elytra feebly narrowed from the base to about apical third, then more strongly, arcuately narrowed to the tip ; sides of the prothorax arcuately shouldered anteriorly ; minute squamules producing a thin cobalt-blue bloom 8

Body narrow, less convex, the sides of the elytra gradually and almost evenly converging from the base nearly to the narrowly rounded apex, and feebly arcuate ; minute squamules easily denuded as usual, producing an olivaceous bloom as a rule, becoming blue in some cases ; elytral intervals slightly alternating in width 9

8. Strial intervals of the elytra conspicuously alternating in width toward tip ; lateral vittæ of the pronotum and elytra pure white, the under surface with a blue bloom, the hypomera with several widely scattered white scales. Length (♂) 29.0–32.0 mm.; width 9.0–10.0 mm. Arizona (Bill Williams Fork) ..... *Snowi*, n. sp.

Strial intervals uniform in width throughout or very nearly so ; lateral vittæ yellowish-white, the under surface as in *Snowi ;* elytra and prothorax more elongate. Length (♀) 30.0 mm.; width 9.0 mm. Arizona (B. Wms. Fork) ..... *idoneus*, n. sp.

9. Sides of the prothorax obliquely rounded and shouldered anteriorly ; body smaller and more slender, the abdomen simple, the fourth segment (♂) not at all impressed at the sides ; hypomera usually with numerous white scales clustered longitudinally at the centre. Length 27.0 mm.; width 7.5 mm. Arizona (B. Wms. Fork) ..... *Arizonicus*, n. sp.

Sides of the prothorax evenly arcuate, and converging from the middle to the apex, the prothorax about a third longer than wide (♂) or somewhat shorter (♀) ; abdomen in both sexes with a pronounced and clearly limited impression at each side of the fourth segment ;

hypomera without white scales. Length 30.0–32.0 mm.; width 8.8–9.1 mm. Arizona (B. Wms. Fork)..... *abdominalis*, n. sp.

10. Elytra scarcely more than twice as long as wide, with the white lateral margin (♀) about twice as wide as in the other three species, and one-fifth as wide as the elytron; third antennal joint two-thirds as long as the fourth; hypomera with same large scattered white scales in addition to the bluish or olivaceous squamules of the general surface; male much smaller, with the intervals alternating in width. Length 29.0–35.0 mm.; width 8.8–11.0 mm. Arizona (B. Wms. Fork) ..... *simulans*, n. sp.

Elytra very distinctly more than twice as long as wide, the pale lateral margin very narrow, even in the female, where it is usually a little wider than in the male; hypomera without white scales.....11

11. Sides of the elytra strongly converging from the base to the narrowly rounded apex, and feebly arcuate; yellowish-white lateral vittæ of the pronotum extending to the lateral bead at apex; last abdominal segment (♀) much less than twice as wide as long, the sides only moderately oblique. Length 39.0 mm.; width 12.4 mm. Arizona (near Fort Apache)..... *acuminatus*, n. sp.

Sides of the elytra very feebly converging and slightly arcuate to near apical fourth or fifth, then more strongly arcuate and converging to the apex; marginal vittæ of the pronotum flexed inward from the beaded edge toward apex; last abdominal segment (♀) strongly oblique at the sides, fully twice as wide as long.....12

12. Scutellum wider than long; pronotum strongly, irregularly foveate anteriorly and laterally as in *acuminatus*, the sides rather abruptly converging and rounded in apical third, parallel thence to the acute but virtually unreflexed basal angles; marginal vittæ pure white. Length 38.0 mm.; width 12.0 mm. Arizona (near Fort Apache)..... *Apacheanus*, Csy.

Scutellum longer than wide; pronotum more finely sculptured, the sides broadly arcuate and converging from the middle to the apex, very feebly diverging posteriorly to the slightly and very gradually everted basal angles; side vittæ pale straw-yellow. Length 42.0 mm.; width 12.8 mm. Arizona (Cochise Co.)..... *nobilis*, n. sp.

13. Body parallel, only moderately convex, the elytra arcuately narrowed toward tip, the prothorax rounded at the sides anteriorly, with the lateral vittæ brownish, nearly half as wide as the broad dark space and almost even; minute squamules olivaceous, the under surface

with pale scales on the hypomera and at the sides of the abdomen ; tibiæ not ciliate in the male. Length 28.0–32.0 mm.; width 8.0–9.5 mm. Arizona (Phœnix). [= *parallelus*, O. Sch.]. . *tartarus*, Fall

14. Body elongate-oval, the elytra not distinctly wider than the prothorax, the latter narrowed very slightly from the large and feebly everted basal angles to apical third, then more strongly rounded to the apex, the lateral vittæ pale brown in colour, attenuate and retreating from the margin anteriorly, their width at apex a third that at base ; elytra without paler lateral margin, the scales pale brown, dense in the sulci, minute and sparser on the convex intervals ; hypomera without larger pale scales. Length (♀) 32.0 mm.; width 10.0 mm. Mexico (Guerrero) . . . . . *Aztecus*, n. sp.

Body much smaller and still more slender, the elytra not narrowing behind the middle only, as in *Aztecus*, but narrowed from base to apex, with feebly arcuate sides, the prothorax similar, but with the lateral vittæ pure white and less attenuate anteriorly, their apical width about half the basal ; elytra with a narrow white margin, the other vestiture as in *Aztecus ;* hypomera with a line of white scales along the central part. Length (♀) 26.0 mm.; width 7.8 mm. Mexico (Guerrero) . . . . . *sodalis*, n. sp.

15. Form parallel, strongly convex, the prothorax, scutellum and entire under surface densely clothed with green squamules, sometimes becoming bluish toward the sides of the first, which is elongate, parallel, broadly, arcuately narrowed in about apical half, with the basal angles strongly and acutely everted; elytra scarcely more than twice as long as wide, parallel, arcuately narrowed near the apex, the striæ impressed, finely punctate, the intervals equal, feebly convex and clothed uniformly and sparsely with extremely minute grayish-blue squamules. Length 33.0–38.0 mm.; width 10.5–13.0 mm. Lower California . . . . . *rubripennis*, Lec.

16. Elongate-oval, moderately convex, black, polished, densely clothed throughout above with large white scales, which thickly fill the sulci of the elytra, the prothorax elongate, moderately narrowed from the everted basal angles, more strongly and arcuately toward apex, the surface somewhat rugose, without lateral vittæ ; elytra parallel, arcuately narrowed behind the middle, with deep sulci and convex subequal intervals ; entire under surface, except the usual glabrous median line, densely clothed with rather smaller suberect brown scales. Length 37.0 mm.; width 11.6 mm. Honduras . *amictus*, n. sp.

17. Elytra (♀) nearly two and one-half times as long as wide, the strial punctures toward the sides moderately coarse and well separated; basal angles of the prothorax gradually and feebly everted. Length 24.0 mm.; width 6.2 mm. Pennsylvania. ..... *viridipilis*, Say

Elytra (♀) but little more than twice as long as wide, the sulci toward the sides very coarsely punctate or closely foveate; basal angles of the prothorax abruptly and feebly everted and more obtuse. Length 20.0–22.0 mm.; width 5.7–6.0 mm. North Carolina and District of Columbia ..... *debilis*, n. sp.

18. Median part of the prosternum narrow, parallel and flat from the anterior lobe to the coxæ; elytra parallel and straight at the sides from the base to slightly behind the middle, then but just visibly converging to the rather broadly rounded tip; elytral striæ very finely punctate, unimpressed; last ventral segment (♀) short and much more than twice as wide as long; tibiæ not ciliate beneath in the male; vestiture only moderately dense, green, varying to coppery in colour. Length (♂ and ♀) 26.0–29.0 mm.; width 6.8–7.5 mm. Arizona (San Bernardino Ranch, Cochise Co.), Snow ..... *rectus*, n. sp.

Median part of the prosternum broadly convex anteriorly near the apical lobe 19

19. The median part becoming narrow, parallel and flat from before the middle to the coxæ; elytra shorter and broader than in *rectus*, parallel, rounded at the sides of the apex; striæ scarcely impressed, the punctures fine; last ventral (♀) relatively narrower and less abbreviated, less than twice as wide as long; vestiture dense, uniform and bright bluish-green in colour. Length 27.0 mm.; width 7.3 mm. Arizona ..... *smaragdinus*, Lec.

The median part broader, flattened and with posteriorly converging sides from very near the lobe to the coxæ; elytra still shorter and broader, parallel to slightly behind the middle, then rather strongly narrowed and with moderately arcuate sides to the tip, which is relatively narrower than in the two preceding species; sculpture similar; last ventral (♀) strongly trapezoidal, more than twice as wide as long; vestiture very dense, almost uniform greenish-blue, sometimes variegated with cobalt-blue; male much more slender than the female, as in the two preceding species. Length (♂ and ♀) 28.0–30.0 mm.; width 7.4–8.0 mm. Arizona (Bill Williams Fork and Congress Junction), Snow ..... *ostentus*, n. sp.

20. Form narrowly elongate-oval, rather strongly convex, the prothorax elongate, broadly rounded and narrowed toward tip, the sides slightly sinuate posteriorly just before the small and sharply everted basal angles; elytra rather strongly narrowed and broadly, feebly arcuate from base to apex, the latter relatively narrow and arcuato-truncate; striæ feebly impressed, finely punctate, the intervals nearly equal and but slightly convex, strongly so at the sides, minutely, not densely punctulate. Length (♂) 28.5 mm.; width 7.6 mm. Arizona (Benson), Dunn..... *Behrensi*, Cand.

The form of the pale margin of the prothorax seems to be comparatively constant and therefore useful in classifying the species as above. The species figured in the "Biologia" as *Webbi*, by Mr. Champion, and subsequently referred to *Apacheanus*, is distinct from both; it has the marginal pronotal vittæ broader than in *Apacheanus* and allies, and slightly dilated inwardly near the middle, a character never observable in those forms. It may be named *Sonoricus* (n. sp.). In like manner the species published on Plate 12 of Vol. III, part 1, fig. 3, of the "Biologia," appears to be more than a variety of *virginalis*, and it may take the name *Championi* (n. sp.). The form given in fig. 8 of the same plate, as a variety of *Desmaresti*, may take the name *brevicollis* (n. sp.); it is narrower and more parallel than *Desmaresti*, with a much shorter prothorax, having a broader median dark vitta and with much finer elytral ridges between the striæ. *Aztecus* and *sodalis*, of the above table, are related to *approximatus*, Er., differing in their much narrower form, less anteriorly converging sides of the prothorax and less dilated elytra, among other characters, and *amictus* is related to *pistorius*, being very much more narrowly oval. The form identified above as *Behrensi*, Cand., may not be wholly identical, but it reasonably satisfies most of the characters of the very short description of that species. The species of *Chalcolepidius* are very local in distribution in the Sonoran regions, as in the case of many other genera.

ZOPHERINI.

The genera of this tribe are well defined in available works, and it is therefore unnecessary to repeat the table given by Leconte and Horn in the "Classification"; it should be mentioned, however, that the genus *Zopherus*, as at present organized, is composed of four genera, three of them at least very sharply delimited and distinct in structure and facies. These genera may be defined as follows:

1. Elytra with distinct and entire epipleura defined by an acute edge; antennal cavities rounded at tip; body rather depressed. Type *Z. Chiliensis*, Gray . . . . . *Megazopherus*

   Elytra without clearly defined epipleura 2

2. Antennal cavities posteriorly angulate at apex; body rather large and strongly convex, always pale, with black mottling; pronotum impunctate. [Type *Z. Mexicanus*, Gray] . . . . . *Zopherus*

   Antennal cavities rounded at tip; body small, strongly convex, the pronotum punctate 3

3. Elytra not impressed near the suture at apex, each with a large, rounded, flattened and abruptly formed tubercle at tip; body black, sometimes with pale venation or general ground colour, usually only visible at the sides; sculpture very coarse. [Type *Z. limbatus*, Csy.] *Zopherinus*

   Elytra impressed at each side of the suture at tip, each with a small oblique ridge at apex; body as far as known deep black, without pale maculation, the sculpture more or less fine. [Type *Z. tristis*, Lec.] *Zopherodes*

The species described by G. H. Horn under the name *Zopherus elegans*, is very exceptional in having the lateral margins pale and the sculpture fine; I have not seen it, but would infer that its structural characters may differ somewhat from those of either *Zopherinus* or *Zopherodes;* it may be attached at present to *Zopherodes.* The type of *Megazopherus* (n. gen.) is the largest species of the tribe. Of *Zopherus*, I have before me one nondescript form, which may be described as follows:

Moderately stout, very convex, the prothorax as wide as the elytra, slightly wider than long, constricted at base, dilated and bisinuate at the sides, yellowish-white, with large spots of black, of which two elongate and approximate, from the base to the middle, sometimes confluent, one at each side before the middle, and the usual transverse spot at the apical margin are unusually distinct; elytra nearly twice as long as wide, with a tolerably regular sutural series of small spots and a marginal series of about five, with other series of small spots much interrupted by very large irregular blotches of black; apex quadri-tuberculate; under surface black, with numerous black-speckled white blotches. Length 18.0–24.0 mm.; width 7.0–9.0 mm. Mexico (Guerrero) . . . . . *marmoratus*, n. sp.

Belongs near *reticulatus*, Ch., but less tuberculose beneath, and with

much larger and more irregular black blotches on the elytra, about four or five on each, arranged without semblance of order.

ZOPHERINUS, n. gen.

This genus is represented before me by the two following species, of which the first may be regarded as the type :

Elongate, convex, dull in lustre, the tubercles of the elytra feebly shining black, the side margins of the pronotum and elytra finely veined with yellowish-white in about a fifth of the total width ; prothorax slightly elongate, somewhat narrower than the elytra, narrowly rounded at the sides, constricted at base, the surface uneven, sparsely punctate, and with large, very flat tubercles toward the sides ; a quadrilateral of four median indentations usually distinct ; elytra nearly twice as long as wide, with rows of large flattened tubercles, the interspaces coarsely rugose ; under surface black throughout ; posterior ridge of the fifth ventral with a large and parallel-sided median spur projecting anteriorly; the excavation with a tubercle at each side. Length 17.0–20.0 mm.; width 6.0–7.5 mm. Mexico (Amecameca)..... *limbatus*, n. sp.

Elongate, very convex, nearly as in *limbatus*, but with a much more shining surface, the elytra less elongate, much wider than the prothorax, wholly black and with large irregular transverse tubercular folds, scarcely arranged in definite lines; prothorax black throughout, as long as wide, very convex, the surface uneven, with four large median depressions forming a square, strongly tuberculose toward the sides, the tubercles posteriorly abruptly elevated, the punctures sparse ; fifth ventral as in *limbatus*. Length 19.0 mm.; width 7.0 mm. Mexico (Amecameca) ..... *lævicollis*, Sol.

The specimen doubtfully referred to *lævicollis* has the surface of the pronotum rather uneven, and the posterior ridge of the fifth ventral could scarcely be described as "trilobed"; it is broadly, feebly sinuate, with a long abrupt parallel-sided spur projecting anteriorly from the bottom of the sinus. *Venosus*, of Champion, is peculiar in coloration, having the white indument covering the entire surface, excepting certain black maculation, as in the true *Zopherus ; limbatus* is undoubtedly a very different species, which appears to have been overlooked. Specimens in this genus, as well as the other Zopherini, should be thoroughly soaked for at least a day in benzine before studying, as the exuded grease otherwise completely conceals their ornamentation.

ZOPHERODES, n. gen.

The species of this genus, so far as known to me, are all deep black, without pale ornamentation and with comparatively fine sculpture, the pronotum always punctate. Those in my cabinet may be readily known as follows :

1. Elytra subcylindrical, more abruptly narrowed at base and toward apex ; pronotum strongly convex 2

   Elytra evenly oval in outline; pronotum usually less convex 3

2. Pronotal punctures not larger or denser toward the sides. Body moderately stout, dull in lustre, the prothorax as long as wide, angulate at the sides anteriorly, not strongly or muricately, sparsely and evenly punctate, each puncture with a short yellowish seta ; elytra rather wider than the prothorax, three-fourths longer than wide, with uneven series of large flattened elevations, the interstices with smaller elevations of the same kind, all with a small setulose puncture at their hind margins. Length 15.0 mm.; width 5.9 mm. Arizona (Gila Valley), Dunn..... *aequalis*, n. sp.

   Pronotal punctures strong but not muricate, uneven in distribution, denser and coarser toward the sides. Body nearly similar, the prothorax less strongly angulate at the sides anteriorly, the surface more coarsely punctate, the elytra not wider than the prothorax, the uneven tuberculose sculpture less definitely lineate; prosternum more clearly, very coarsely punctate ; abdomen similarly coarsely punctate. Length 12.0–16.0 mm.; width 4.5–6.4 mm. Arizona.. *tristis*, Lec.

3. Elytra tuberculose 4

   Elytra without tubercles, the surface smooth, alutaceous, with sparse vermiculate incised lines ; prosternum tuberculose 11

4. Integuments polished. Form moderately stout, very convex, the prothorax scarcely as long as wide, the sides very feebly angulate before the middle, constricted at base as usual, coarsely, sparsely, irregularly and simply punctate, closely toward the sides; elytra as wide as the prothorax, rather less than twice as long as wide, coarsely, very strongly, closely and more or less irregularly tuberculose; prosternum roughly punctured and tuberculose. Length 14.5–16.5 mm.; width 5.4–6.4 mm. New Mexico..... *concolor*, Lec.

   Integuments more or less dull in lustre 5

5. Elytra but little more than one-half longer than wide. Form stout, the prothorax nearly as long as wide, rounded at the sides, the latter

slightly subangulate before the middle, the surface coarsely, submuricately punctate, only slightly more closely toward the sides; elytra evidently wider than the prothorax, finely, strongly and unevenly tuberculose, the tubercles slightly shining; prosternum irregularly, closely and muricately tuberculose. Length 16.5 mm.; width 7.0 mm. California..... .....*induratus*, Csy.

Elytra at least twice as long as wide in both sexes..... 6

6. Elytra evidently wider than the prothorax, greatly so in the female. Rather stout, the prothorax fully as long as wide, very coarsely and strongly (♂) or moderately (♀) muricately punctate, the surface (♂) more shining than in the ♀, the punctures slightly closer toward the sides, which are rounded, only slightly prominent before the middle; elytra rather finely but very irregularly, closely tuberculose, the lustre very dull in the ♀, rather shining in the ♂, the sculpture transversely and very unevenly rugulose in the latter; prothorax very unevenly punctato-tuberculose. Length 18.0–19.0 mm.; width 6.9–7.5 mm. California (southern)...*ventriosus*, n. sp.

Elytra never distinctly wider than the prothorax in either sex 7

7. Elytral tubercles larger, strong, approximating half the thickness of the femora in diameter, arranged more or less definitely in close series 8

Elytral tubercles minute, sometimes very feeble, confusedly arranged.9

8. Form rather slender, dull in lustre, the prothorax nearly as long as wide, parallel and broadly rounded at the sides, narrowing toward base, strongly, sparsely, non-muricately punctate, more closely and coarsely toward the sides; elytra with the tubercles large, strongly convex and less dull, the interstices densely dull and with small, remote and perfectly simple punctures; prosternum coarsely punctato-tuberculose. Length 17.0 mm.; width 6.2 mm. New Mexico .....*guttulatus*, Horn

Form nearly similar, the pronotum more uneven, with two more or less distinct medial indentations transversely arranged, the punctures coarser muricate, still larger toward the sides; elytra with smaller tubercles, less than half the thickness of the femora in diameter, less opaque than the interstices, which are strongly, muricately punctate; prosternum with small, distinct and sharply elevated tubercles; abdomen finely, sparsely punctate, more strongly toward base. Length 14.5–16.0 mm.; width 5.3–6.2 mm. New Mexico (Fort Wingate), Schufeldt .....*otiosus*, n. sp.

9. Punctures of the pronotum fine, sparse, very faintly muricate, much stronger, closer and muricate toward the sides, without trace of a median impunctate line. Body very slender, dull; prothorax as long as wide, rounded at the sides and slightly prominent just before the middle; elytra moderately opaque, the tubercles moderately small, in mutual contact, extremely feeble in elevation and separated by fine feeble lineiform depressions; prosternum rather finely, acutely tuberculose. Length 15.0 mm.; width 5.0 mm. Arizona... *pudens*, n. sp.

Punctures of the pronotum coarser, strongly muricate, divided along the middle by a more or less incomplete narrow impunctate line ...10

10. Elytral tubercles in mutual contact, rather strongly elevated and somewhat shining, the incised lines between them fine but distinct; prothorax fully as long as wide, subcordate, coarsely and conspicuously muricato-punctate, very coarsely toward the sides, the latter only very obtusely prominent just before the middle; elytra elongate, each of the small muricate punctures, at the hind margins of the tubercles, bearing a rather distinct yellow seta; prosternum strongly tuberculose. Length 17.5 mm.; width 5.9 mm. Utah (south-western), Weidt..... .... *Uteanus*, n. sp.

Elytral tubercles clearly isolated by the densely opaque interstices, very flat but very much more shining than the surface separating them, larger and smaller alternating in very obscure inconstant lines at some parts of the disk; prothorax cordate, fully as long as wide, the punctures strongly muricate but not much larger or closer toward the sides, the latter rounded, only very obtusely prominent before the middle; elytra elongate; general form very slender; prosternum tuberculose. Length 17.0 mm.; width 5.5 mm. Utah.. *Mormon*, n. sp. (Horn, MS.)

Elytral tubercles very small, not larger than the muricate punctures of the pronotum; entire surface very densely opaque as in *Mormon*, the body larger and less slender; prothorax formed nearly as in *Mormon*, the punctures strong and only slightly muricate on the median parts, becoming very coarse and muricate toward the sides; prosternum coarsely, deeply punctate, not tuberculose. Length 18.8 mm.; width 6.5 mm. Utah .... *opacus*, Horn

11. Terminal grooves of the elytra very long, about a fifth of the total length. Body very slender, dull in lustre; prothorax a little longer than wide, the sides nearly straight and subparallel anteriorly,

strongly rounding to the apex and slightly prominent before the middle, thence strongly converging to the base, finely, sparsely punctate, the punctures rather abruptly coarse and slightly muricate near the sides; elytra with minute, sparse and simple punctures, much wrinkled toward base, and with some small tubercles near the humeral angles. Length 16.0 mm.; width 5.5 mm. Arizona ... *caudalis*, n. sp.

Terminal grooves very short as usual 12

12. Form very slender in the ♂ and nearly similar in the ♀; prothorax as long as wide, or slightly longer (♂), finely, feebly, rather sparsely and simply punctate, abruptly coarsely, densely and submuricately so very near the lateral edges, the latter converging and straight from the feeble ante-median prominences more than half way to the tip, then rounded to the apex, converging and broadly arcuate toward base; elytra nearly as in *caudalis*, but rather more rugulose. Length 18.0 mm.; width 5.8 mm. Arizona (Grand Canyon of the Colorado) ..... *lugubris*, n. sp.

Form moderately slender, larger and less slender than in *lugubris*, similarly dull in lustre; prothorax fully as wide as long, in form and sculpture nearly similar to *lugubris*, but less prominent at the sides just before the middle, and much more tuberculose on the flanks, thence to the base; elytra nearly similar, but with coarser vermiculate impressed lines and shorter, stronger apical tubercles; prosternum much more strongly tuberculose, not evenly as in *lugubris*, but in uneven transverse lines. Length 19.0 mm.; width 6 6 mm. Arizona (Grand Canyon of the Colorado), T. Mitchell Prudden.... *Pruddeni*, n. sp.

Form stouter and more parallel than the two preceding, and less constricted at the junction of the elytra and prothorax, the latter nearly as in *lugubris*, but with less converging straight sides anteriorly, which are more abruptly and briefly rounded to the apex at tip; similarly converging and arcuate, with the flanks tuberculose, posteriorly; surface minutely, sparsely, simply punctate, the punctures not noticeably coarser or denser toward the sides, except slightly along the immediate subprominent edge anteriorly; elytra somewhat flattened above, almost smooth but dull as usual, with a few fine tubercles near the humeral angles. Length 20.0 mm.; width 7.0 mm. Arizona ..... *luctuosus*, n. sp.

The species described by Horn under the name *granicollis* is not at hand at present, and therefore cannot be inserted at its proper place in the table; it is distinctly isolated in sculpture and can be readily identified from the original description. *Gracilis* Horn, is also unique as far as known; it may be distinguished from *caudalis* and allies by its shining surface and punctured, not tuberculate, prosternum. *Elegans* may be provisionally attached to this genus, as before remarked.

PHLŒODES, Lec.

Of the two described species of this genus, *diabolicus*, inhabiting the more northern regions of California, has dense pale vestiture on the apical declivity of the elytra, while *pustulosus*, Lec., from San Diego, has no pale incrustation, and is a much larger insect. The species or subspecies are rather numerous, and those in my cabinet may be described in outline as follows:

1. Elytra with more or less pale vestiture on the apical declivity 2
   Elytra without paler vestiture at apex 4
2. Form stout, the prothorax as wide as long, very nearly as wide as the elytra; velvety spot at the middle and base of each elytron small and very inconspicuous; whitish vestiture forming a large solid patch at each side of the apical declivity. Length 16.0–19.5 mm.; width 6.4–7.5 mm. California (Mt. Diablo) ..... *diabolicus*, Lec.
   Form slender 3
3. Prothorax slightly longer than wide, sculptured nearly as in *diabolicus*, the head with small tubercles throughout, and not sparsely tuberculose at the middle of the vertex as in that species; elytra oval, only very slightly wider than the prothorax, the pale vestiture more diffused between the rugosities of the apical declivity, the central velvety spot slightly arcuate and oblique, the basal short. Length 14.0–16.0 mm.; width 5.4–6.2 mm. California, Cab. Levette..... *ovipennis*, n. sp.
   Prothorax distinctly elongate, the finer tubercles aggregated in two longitudinal sinuous median lines more obviously than in *diabolicus*, the head covered throughout with small tubercles which are close-set, and, as in *ovipennis*, densely punctulate on their convex surfaces; elytra oblong-oval, with the pale vestiture confined to the apical parts of the declivity, the velvety spots large and distinct, the basal much elongated. Length 17.0 mm.; width 6.4 mm. California (Kern Co.) *elongatus*, n. sp.

4. Prothorax as wide as the elytra (♂) or nearly so (♀); sculpture very rugose; colour deep black throughout; elytra oblong; anterior femora tuberculose. Length 19.0–22.5 mm.; width 7.4–8.8 mm. California (San Diego) ....*pustulosus*, Lec.

Prothorax much narrower than the elytra 5

5. Pronotum rather strongly elevated along median third; body rather narrow, elongate; prothorax longer than wide, the slopes of the median elevation slightly concave and devoid of tubercles, the latter close along the sides of the elevation; elytra evenly oval, about two-thirds longer than wide, rugose as usual. Length 19.5 mm.; width 7.2 mm. California (near San Diego), Dunn....*scaber*, n. sp.

Pronotum but feebly elevated along the middle 6

6. Elytra oblong, about one-half longer than wide, deeply and roughly sculptured, with the velvety spots well developed: prothorax slightly longer than wide, strongly and rather closely though unevenly tuberculose over the entire surface. Length 20.0 mm.; width 7.8 mm. California, Cab. Levette.....*latipennis*, n. sp.

Elytra oval, much narrower and more elongate, nearly three-fourths longer than wide, scabrous as usual, the velvety spots indistinct; prothorax narrower and still more elongate, very unevenly and more sparsely tuberculose, with large areas along the middle and lateral third devoid of tubercles; body much more elongate and narrower in form. Length 19.5 mm.; width 7.2 mm. California, Cab. Levette. .....*angustus*, n. sp.

The forms above enumerated are mutually very similar in facies and sculpture and may prove to be subspecies of a single stock, but they are at least recognizable.

NOSERUS, Lec.

The three species in my cabinet may be known by the following characters:

1. Prothorax evenly cordate, narrowed behind from near the apex 2

Prothorax parallel and rounded at the sides, narrowed posteriorly only behind the middle 3

2. Body broad in form, the prothorax slightly longer than wide, scarcely at all convex, irregularly tuberculose and uneven, with two longitudinal ridges, angulate toward the median line, especially evident; elytra slightly wider than the prothorax, oblong, flattened above, rapidly declivous at the sides, each with three large tumidities on

the strongly declivous apex, one oblique just behind the middle and a short longitudinal median ridge basally, the ground surface finely, sparsely tuberculose. Length 15.5–16.0 mm.; width 6.3 mm. California (Monterey), Dunn.....*plicatus*, Lec.

Body nearly similar but much smaller and relatively narrower, the elongate prothorax with coarser tubercles toward the sides and finer and sparser elsewhere, the inequalities of the surface nearly as in *plicatus*, but with the elevations more pronounced; elytra not (♂) or but slightly (♀) wider than the prothorax, with the principal elevations nearly as in *plicatus*, but with the ground surface more coarsely pitted and still more minutely tuberculose. Length 14.0–15.5 mm.; width 4.7–5.7 mm. California, Cab. Levette..... *torvus*, n. sp.

3. Form relatively broader and more parallel, the prothorax less narrowed at base, flat above, and not longer than wide, with many unevenly disposed tubercles, the elevations of the same general form as in the two preceding but very much feebler; elytra not wider than the prothorax, scarcely more than one-half longer than wide, sculptured nearly as in the preceding, the longitudinal basal ridge more acutely elevated. Length 16.0 mm.; width 6.2 mm. California, Cab. Levette.....*collaris*, n. sp.

The species described by G. H. Horn under the name *emarginatus* I have not seen; it occurs in Texas. *Noserus* greatly resembles *Nosoderma* in facies, but differs in its slightly grooved tarsi, and in having a feeble antennal groove anteriorly.

PHELLOPSIS, Lec.

This genus resembles *Nosoderma* in having the tarsi not grooved and the antennal cavities wholly wanting, but differs greatly in facies and in having eleven free antennal joints. Dr. Horn surmises in the "Classification," that *porcata*, of LeConte, may be only a variety of *obcordata*, Kirby, and it is so indicated in the Henshaw list, but the two forms are in reality well differentiated species. The four species in my cabinet may be readily known as follows:

1. Outer of the two discal ridges of each elytron obsolete at about a fourth of the total length of the elytra from the base; sides of the elytra parallel 2

Outer ridge obsolete much nearer the base, this distance being a sixth or seventh of the total length; sides of the elytra feebly converging from the rounded humeri to the subapical tumidity 4

2. Elytra much more than twice as long as wide, the general form more slender, with a relatively somewhat smaller prothorax, the sides of which are subparallel for more than half the length from the apex, then strongly converging to the base, the surface uneven, with an elevation at each side near the middle and a large elongate-oval median elevation in basal two-thirds, which is concave anteriorly and deeply foveate at base, the tubercles of the general surface moderate, not parted along the median line at the centre of the pronotum; elytra each with two discal ridges and three strong subapical tumidities, coarsely foveato-punctate in series. Length 12.0–13.5 mm.; width 4.2–4.9 mm. Oregon ..... *porcata*, Lec.

Elytra together twice as long as wide 3

3. Body nearly similar throughout to *porcata* but very much stouter, the elytral punctures more shallow and obscure, the pronotum with very coarse tubercles anteriorly, the basal pubescent fovea of *porcata* replaced by a short nude sulcus, the central part of the disk not sulcate, but more coarsely tuberculose than in *porcata*; elytra nearly similar, except that the outer of the three subapical tumors is very much smaller and less prominent. Length 14.5 mm.; width 5.5 mm. Idaho (Cœur d'Alene) ..... *robustula*, n. sp.

Body stouter than in *porcata*, the prothorax rounded and subprominent at the sides anteriorly, more strongly narrowed posteriorly from the middle or still more anteriorly; elevations of the surface nearly as in *porcata*, but with the oval central inclosure much more open anteriorly and with very large tubercles ranged in series along a narrow nude longitudinal sulcus at the centre of the pronotal disk; subapical tumors of the elytra large and conspicuous; elytra nearly similar but with much deeper, more perforate and distinct serial foveæ. Length 10.8–14.0 mm.; width 3.9–5.1 mm. New Hampshire (White Mts.) and Pennsylvania ..... *obcordata*, Kirby

4. Body generally similar to the preceding but with the prothorax rounded at the sides anteriorly and moderately narrowed in basal two-fifths, the general surface flatter, with less prominent elevations, the median basal oval elevation much shorter, not extending before the middle, with a narrow sulciform fovea at the centre of the pronotal disk, and a larger and more rounded pit at the base; tubercles throughout strong and distinct; elytra with the inner of the longitudinal ridges less obliterated behind basal fourth, almost

continuous, the punctiform serial foveæ smaller, the lateral subapical tumors rather smaller and less prominent than in *porcata* and *obcordata*, but much more so than in *robustula*. Length 12.0–14.5 mm.; width 4.5–5.4 mm. California (Placer Co. and Lake Tahoe).. *montana*, n. sp.

Other species of this genus probably exist in collections.

ENTOMOLOGICAL SOCIETY OF AMERICA.

The initial meeting of the Entomological Society of America was held in the American Museum of Natural History at New York City, Dec. 28, 1906.

On the evening of December 28, Prof. Wm. M. Wheeler delivered before the Society an illustrated lecture on "The Polymorphism of Insects." Immediately after the lecture the business meeting took place. Prof. J. H. Comstock, of Ithaca, N. Y., was elected chairman, and E. S. G. Titus, of Washington, D. C., secretary of the meeting. The new Society then adopted a constitution and by-laws, and elected officers and the other members of the Executive Committee.

The following are the officers: President, J. H. Comstock, Ithaca, N. Y.; 1st Vice-President, James Fletcher, Ottawa, Can.; 2nd Vice-President, Henry Skinner, Philadelphia, Pa.; Sec.-Treasurer, J. Chester Bradley, Berkeley, Cal.

The Executive Committee consists of the officers and the following: Wm. M. Wheeler, New York, N. Y.; John B. Smith, New Brunswick, N. J.; Herbert Osborn, Columbus, O.; C. J. S. Bethune, Guelph, Can.; F. M. Webster, Washington, D. C.; and Chas. W. Johnson, Boston, Mass.

Following the business meeting, there was a smoker at the Hotel Endicott, given by the Brooklyn, Newark and New York Entomological Societies to the Association of Economic Entomologists and the Entomological Society of America.

The Executive Committee, at a meeting held December 29, decided to call a meeting of the Society at Boston, Mass., in connection with the meetings of the International Congress of Zoology in August, 1907. Full announcement will be made later.

All persons interested in entomology, and residing anywhere in the Americas, are invited to apply for membership. The dues are one dollar a year. The membership now exceeds 250. The American Association for the Advancement of Science granted affiliation to the new Society at their New York meeting. E. S. G. Titus, Secretary.